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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	)	
Edwin James DuMorris Eddy et al	)	Examiner Clark F Dexter
	)	
Serial No 09/380,351	)	
	)	Group Art Unit 3724
Filed: August 31, 1999	)	
	)	
For: LONGITUDINAL COLD	)	
SEPARATION DEVICE	)	Attorney Docket P-6374.03 CPA

Assistant Commissioner for Patents  
Washington, D.C. 20231

DECLARATION OF SHAY VINCENT EDDY

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OCT 03 2002

Honorable Sir:

TECHNOLOGY CENTER R3700

I, Shay Vincent Eddy, declare and state that:

1. I am one of the named inventors in the above-mentioned patent application.
2. I am the director of a company whose main business for the past 19 years has been in the separation and straightening of elongate metallic members, such as I beams, U sections etc. (the operation of separating elongate metallic members along a longitudinal axis is referred to in the trade as "beam splitting"). During that time our company has used many types of beam splitting equipment, and I am generally familiar with the various metal cutting techniques used in beam splitting.
3. I have read and understand US Patent No 4,452,118 ("the Muller reference"), the Office Action March 21, 2002 in which the Muller reference is cited, and my CPA with preliminary amendment filed on December 28, 2001.
4. In the fourth paragraph on page 5 of the preliminary amendment to the CPA it was stated that:

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*"Muller teaches the use of power driven feed rollers to push and pull blank 28 through the separation unit. This is unacceptable in metal cutting; and, therefore, teaches away from the present invention."*

In the first paragraph of page 7 of the Office Action the Examiner respectfully submits that this argument is not persuasive, particularly since applicant has provided no evidence to support the conclusion.

5. I hereby provide the following evidence, based on my 19 years of experience in this skill area as to why the use of power driven feed rollers to push and pull blank 28 through the separation unit would be unacceptable in metal cutting, and hence why Muller teaches away from the present invention.

The drive rollers of Muller rely on frictional forces between the wooden blank 28 and rollers 64, 66 and 92, 94 to push and pull the blank through the separation unit. The surfaces of metallic elongate members, such as I beams are much smoother than surfaces of the wooden blank 28, and therefore to generate the same frictional force on an elongate metallic member as a wooden blank, it would be necessary to increase the lateral force exerted by the rollers on the blank proportionally with the coefficient of friction of the surface of the elongate metallic member.

Increasing the lateral forces exerted by the rollers 64, 66 and 92, 94 leads to the following deleterious effects in the cutting of elongate metallic members:

- i) The rollers mark the surface of the elongate metallic member (hereinafter referred to as work-pieces) due to the large force exerted on by the rollers;
- ii) The force exerted by the rollers on the work-piece generates stresses in the work-piece as it is being separated, these stresses remaining in the separated pieces;
- iii) The reliance of friction to push and pull the work-piece through the separation unit gives rise to slippage between the rollers and the work-

piece, which causes the work-piece to be presented to the cutter erratically, each time slippage between the rollers and the work-piece occurs;

- iv) The engagement of the drive rollers with the work-piece is affected by vibration of the blade. The vibrations which the blade generates are transmitted through the work-piece to the rollers, and the frictional engagement of the rollers with the work-piece is disturbed;

Further, gripping the metal work-piece upstream and downstream of the cutter with pairs of power driven rollers as in Muller has deleterious effects.

- i) Whilst in the device of the invention it is desirable hold the work-piece firmly at the point of cut, it is undesirable to move partially separated pieces downstream of the cutter towards one another. If one attempted to cut metal with apparatus described in Muller, the partially separated pieces downstream of the cutter would be pushed together by the lateral forces exerted by the rollers 92, 94. The effect of this would be to nip the blade of the cutter, reducing separation performance and increasing blade wear; and
- ii) In both the device of the invention and Muller, the cutters induce vibration in the work-pieces. In the Muller device, the work-piece is gripped tightly upstream and downstream of the cutter by the two sets of rollers 64, 66 and 92, 94. The vibrations are therefore contained in the work piece between the two sets of rollers, building up in the work-piece rather than being dissipated. Furthermore, in comparison with the pusher arm of the invention, in Muller the point of drive (i.e. the driven feed rollers 64, 66 and 92, 94) is in relatively close proximity to the blade, and therefore vibrations in the work-piece are greatest in the blade region. This affects the cutting efficiency of the blade, and increases blade wear. In the device of the invention, the pusher arm is located as far from the cutter as possible, and downstream of the last non-driven guide roll of the separation unit, the separated or partially separated work-pieces are free to move laterally, thereby permitting any vibrations in the work-piece to dissipate.

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6. The Examiner states, "that it is old and well known in the art to use a sawing device, particularly a rotary sawing device, to cut metallic work pieces." I am well aware of rotary sawing devices used for cutting elongate metallic work-pieces. However, these sawing devices hold the elongate work-piece tightly preventing any lateral movement of the partially separated work-pieces away from the blade, until the desired cutting is completed. In contrast and distinguishing it over the prior art, the device of the present invention allows the partially separated work-pieces to move laterally of the blade downstream of the separation unit.
7. All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true;
8. These statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardise the validity of the application or any patent resulting thereon.



Shay Vincent EDDY

Date: 19-9-02